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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,202

12/21/2006

Fuquan Zeng

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EXAMINER

HUHN, RICHARD A

ART UNIT

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1796

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09/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,202	Applicant(s) ZENG ET AL.	
	Examiner RICHARD A. HUHN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-29 and 31-47 is/are pending in the application.
- 4a) Of the above claim(s) 44-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-29 and 31-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 23-29 and 34-47 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>22 Sep 2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 23-29 and 31-43, drawn to products comprising polyethylene terephthalate, a hindered amine light stabilizer, and an acetaldehyde scavenger, classified in class 524, subclass 717.
 - II. Claims 44-47, drawn to methods of making molding compositions, classified in class 524, subclass 99.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by another and materially different process, such as polymerization in the presence of the additives.
3. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

4. **Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.**

5. The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after

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the election, applicant must indicate which of these claims are readable on the elected invention.

6. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

7. Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

8. During a telephone conversation with Paul Serbinowski on 19 August 2009 a provisional election was made without traverse to prosecute the invention of Group I, claims 23-29 and 31-43. Affirmation of this election must be made by applicant in replying to this Office action. Claims 44-47 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

10. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are

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subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

11. In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Specification

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12. The abstract of the disclosure is objected to because it is insufficient in length. The abstract should be from 50 to 150 words in length, and no more than 15 lines of text. Applicant is reminded not to add content which may be considered new matter. Correction is required. See MPEP § 608.01(b)(C) second paragraph, and see 37 CFR 1.72(b).

Claim Objections

13. Claim 32 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 32 recites a polyethylene moiety $(\text{CH}_2\text{CH}_2)_p$, but this group does not fall within the scope of the structure recited in base claim 29.

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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16. Claim 32 recites (fourth and fifth lines of the claim) limitations regarding the structure which is recited in base claim 29: "...G₁ and G₂ represent hydrogen atoms; a - (CH₂CH₂)_p- moiety...". However, it is not clear from this language where the polyethylene unit is attached to the structure. Therefore, the claim is considered indefinite.

17. Furthermore, it is not clear that the polyethylene group is in any way related to the groups G, G₁, or G₂ which are recited in base claim 29. Therefore, independent of its point of attachment to the structure in claim 29, the meaning of the limitation of a polyethylene moiety is not understood within the context of the scope of claim 32.

18. For examination purposes, the limitation "a -(CH₂CH₂)_p- moiety..." has been neglected.

Claim Rejections - 35 USC § 102

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

20. Claims 23-29, 31-33, 37, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 2002/079310 (herein "Simon"). While Simon is relied upon for its prior art date, the corresponding US Patent Application Publication No. 2004/0106767 is referred to herein.

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21. As to claim 23: Simon discloses a product (see "bottles" in the abstract) comprising a composition which comprises polyethylene terephthalate (see abstract, and paragraph 97), a hindered amine light stabilizer (see several examples in paragraph 77), and an acetaldehyde scavenger (see several examples in the abstract, including xylitol and pentaerythritol; see also paragraph 29 which discloses combinations of the polyhydric alcohols "(a)" and amine stabilizers "(c)").

22. As to claim 24: Although Simon fails to specifically name recycled PETE, it is noted that the limitation "recycled" is considered a product-by-process limitation. Case law has established that the patentability of a product-by-process is determined by the patentability of the product itself, i.e. that the patentability of a product does not depend upon its method of production (MPEP 2113). The process limitations are only given consideration regarding patentability if there is criticality to the structure implied by the steps of the process. Because the claim as presently drafted does not contain any limitations which materially distinguish the presently claimed polymer from that of Simon, it is evident that the polymer which is presently claimed stands properly anticipated by Simon, notwithstanding any difference in the method by which the polymers of Simon are made.

23. As to claim 25: Simon further discloses that the product may be in pellet form (see paragraph 66).

24. As to claims 26 and 28: Simon further discloses molded articles such as bottles (see the abstract).

25. As to claim 27: Simon further discloses preforms (see paragraph 97).

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26. As to claim 29: Simon further discloses hindered amine light stabilizers which include the presently recited piperidinyl and piperazinyl moieties (see paragraph 77).

27. As to claim 31: Simon further discloses the compound according to the instant formula IV (see formula H2 in paragraph 77).

28. As to claim 32: Simon further discloses compounds according to instant moiety I (see paragraph 16).

29. As to claim 33: Simon further discloses compounds according to instant formula VII (see formula H5 in paragraph 77, page 5)

30. As to claim 37: Simon discloses polyhydric compounds (such as pentaerythritol, see abstract) which have at least two hydrogen-substituted heteratoms bonded to carbon atoms, which compounds will react with acetaldehyde to form water and a compound comprising an unbridged 6-membered ring which includes the two heteroatoms.

31. As to claim 42: Simon discloses that the stabilizer/scavenger compounds are added in up to 1 wt% of the polymer composition (see paragraph 30). It therefore appears that the products made according to Simon will necessarily include at least 95 wt% of polyethylene terephthalate.

32. In view of this discussion, it is evident that claims 23-29, 31-33, 37, and 42 stand properly anticipated by Simon.

Claim Rejections - 35 USC § 103

33. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

34. Claims 23-29, 31-33, 37, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon.

35. This discussion with respect to Simon as set forth above in paragraphs 21-31 is incorporated here by reference.

36. As to claims 23-29, 31-33, 37, and 42: As set forth above, Simon discloses each of the components of the cited claims, and further discloses that each of the components may be combined (see paragraph 29). Simon fails to specifically name a composition comprising one of the hindered amines (light stabilizers) and one of the polyhydric alcohols (acetaldehyde scavengers). However, in view of Simon's teaching that combinations of these two components are specifically envisioned by the reference (paragraph 29), a person of ordinary skill would have been motivated to prepare any of the compositions disclosed and suggested by the reference, including the compositions which contain both one of the hindered amines (light stabilizers) and one of the polyhydric alcohols (acetaldehyde scavengers). In view of this, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have made any of the compositions disclosed and suggested by the reference,

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including the compositions which contain both one of the hindered amines (light stabilizers) and one of the polyhydric alcohols (acetaldehyde scavengers), thereby arriving at the presently claimed inventions.

37. Claims 34-36, 38-41, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon in view of US Patent No. 6,274,212 (herein "Rule").

38. The discussion with respect to Simon as set forth above in paragraphs 21-31 is incorporated here by reference.

39. As to claim 34: As set forth above, Simon discloses products made from compositions comprising polyethylene terephthalate and hindered-amine light stabilizers. Simon fails to specifically name an acetaldehyde scavenger which includes one or more nitrogen atoms, as is presently recited.

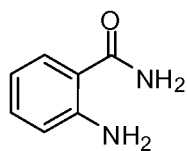
40. However, Simon recognizes the need to have a small acetaldehyde content in the product (see paragraph 2), and, as set forth previously, further discloses several additives which are used to reduce the producing of acetaldehyde (see paragraph 6). It is generally within the ordinary level of skill in the art to identify and use compounds which are known in the art for the same purpose (MPEP 2144.06). In view of this, a person of ordinary skill would recognize that many different additives may be employed to reduce the acetaldehyde content in products made from polyethylene terephthalate, and would have been motivated to identify and use other acetaldehyde scavengers which are known in the art.

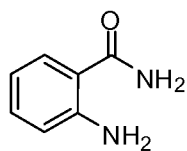
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41. Nitrogen-containing acetaldehyde scavengers are well known in the art. For example, Rule discloses several nitrogen-containing acetaldehyde scavengers (see col 5 lines 15-30, and the Table in col 6) which are used in products made from polyethylene terephthalate (see 7 line 45). In view of Rule, a person of ordinary skill would know that nitrogen atom-containing compounds are known for use as acetaldehyde scavengers for products made of polyethylene terephthalate.

42. In view of this discussion, it is evident that a person of ordinary skill would have been motivated to identify and use acetaldehyde scavengers which are known in the art, including compounds containing nitrogen atoms such as those taught by Rule. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used a nitrogen atom-containing acetaldehyde scavenger, as taught by Rule, in the compositions of Simon, thereby arriving at the presently claimed invention.

43. As to claims 35-38: Rule further discloses the compound anthranilamide (see Example No. 16 in the table in col 6) as an acetaldehyde scavenger. Anthranilamide



(shown here: ) has a primary amine moiety, as is recited in claim 35; it also has a -CONH₂ and a substituted phenyl moiety, as are recited in claim 36.

44. As to claims 39-40: Whereas Simon fails to specifically name a composition comprising both an acetaldehyde scavenger and a hindered amine light stabilizer, Simon also fails to specifically name the ratio of these two compounds. However, as set forth above in paragraphs 39-42, it would have been obvious to prepare a composition

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comprising both an acetaldehyde scavenger and a hindered amine light stabilizer. A person of ordinary skill would further be motivated to optimize the relative amount of the acetaldehyde scavenger and the hindered amine light stabilizer in order to achieve desired results, including the amount of acetaldehyde released from the polymer. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have optimized the ratio of acetaldehyde scavenger to hindered amine light stabilizer, including using a ratio of 2 to 30 as recited in claim 39 or a ratio of 3 to 8 as recited in claim 40, thereby arriving at the presently claimed invention.

45. As to claim 41: Simon discloses that the additives (the acetaldehyde scavenger and the hindered amine light stabilizer) are added in the amount of 0.005-1 wt% (see paragraph 30). However, as set forth above in paragraphs 39-42, it would have been obvious to prepare a composition comprising both an acetaldehyde scavenger and a hindered amine light stabilizer, and as set forth above in paragraph 44, it would have been obvious to a person of ordinary skill in the art to optimize the ratio of acetaldehyde scavenger to hindered amine light stabilizer. In view of this, it would have been obvious to a person of ordinary skill to have used an amount of acetaldehyde scavenger and hindered amine light stabilizer within the presently claimed ranges, because Simon teaches that additives such as acetaldehyde scavengers and hindered amine light stabilizers may be used in those amounts.

46. As to claim 43: As set forth above in paragraph 21, Simon discloses hindered amine stabilizers which are presently recited in section (a). As set forth above in

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paragraphs 41 and 43, Rule discloses acetaldehyde scavengers having primary amino groups, as recited in section (b). As set forth above in paragraphs 44-45, a person of ordinary skill would have been motivated to optimize the amount of ratio of acetaldehyde scavenger to hindered amine light stabilizer as well as the amount of each, as are recited in sections (c) and (d), in order to achieve desired results. In view of this discussion, it is evident that it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have combined the acetaldehyde scavengers of Rule with the hindered amine light stabilizers of Simon in the present recited amounts, thereby arriving at the presently claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD A. HUHN whose telephone number is (571) 270-7345. The examiner can normally be reached on Monday to Friday, 8:30 AM to 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. A. H./
Examiner, Art Unit 1796